

**Genus *Syndiamesa* Kieffer 1918 (*Diamesinae*,
Chironomidae, *Diptera*) and description of two species:
Syndiamesa serratosioi sp. n. and *Syndiamesa vaillanti* sp. n.**

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Abstract — Taxonomic revision of genera *Syndiamesa* Kieffer in the sense of Edwards (1929) are presented. *Parapotthastia* Serra-Tosio is shown to be a junior synonym. Males of two new species *Syndiamesa serratosioi* and *Syndiamesa vaillanti* are described. Key to males of the *Syndiamesa* Kieffer is given.

Key words: taxonomy, *Chironomidae*.

1. Introduction

During work on the material of *Chironomidae* from the Polish part of the Tatra Mts, two males of the genus *Syndiamesa* Kieffer were found in winter samples (March); they slightly differed from the known species. After discussing the problem with Prof. Bernard Serra-Tosio and analysing the comparative materials of *Syndiamesa edwardsi* (Pag.), made available by him, the author has come to the conclusion that the specimens from the Tatra Mts belong to a new species of the genus *Syndiamesa*. Simultaneously Dozent Joseph Er-

nest Fittkau and Dr. Frederick Reiss kindly permitted the author to make use of their materials of *Syndiamesa* collected by Prof. F. Vaillant from Morocco. They proved to belong to a yet unknown species of the genus *Syndiamesa*.

The identification of the two new species considerably enlarges the knowledge on that genus. In this connection, a critical review of the genus *Syndiamesa* was undertaken. In the present paper the author based exclusively on imago stages of males, making use of his own materials as well as those made available by other authors, and also of data taken from literature. Descriptions of females, pupae, and larvae given in other authors' publications, are referred only.

The genus *Syndiamesa* from the subfamily *Diamesinae* belongs to one of the most controversial genera within the family of *Chironomidae*. Established by Kieffer (1918) it was not properly identified by him, neither was the typical species for this genus determined. This made various authors, from Kieffer (1918) on, include into that genus a number of species not phylogenetically allied (Goetghebuer 1932, 1939, Mueller 1924, Tokunaga 1936, Roback 1957). With time new genera and subgenera were differentiated from this genus, or else species belonging to it were included into other genera. Edwards (1929) determined *Syndiamesa hygropetrica* Kieff. as a species typical of the genus *Syndiamesa*. When Pagast (1947) included this species into the genus *Diamesa*, it brought about a complete suppression of this genus. Later authors: Brundin (1956), Sublette, Sublette (1965), Fittkau, Schlee, Reiss (1968) support this attitude and find that *Syndiamesa* is one of the synonyms of *Diamesa*. Other researchers: Potthast (1929), Thienemann (1934, 1952), who were engaged in systematics of larvae, found that there was no good reason for maintaining this genus and included the species *Syndiamesa hygropetrica* Kieff. to *Diamesa*. Serra-Tosio (1968) in his critical elaboration on *Diamesini* established for the species *S. edwardsi* (Pag.) a new genus *Parapotthastia* and gave its detailed diagnosis. In his subsequent publication Serra-Tosio (1971) included into that genus *S. hygropetrica* (Kieff.) enlarging the diagnosis by some new characteristics, giving simultaneously his reasons for maintaining the name *Parapotthastia* and not returning to the name *Syndiamesa*. In his later publication (Serra-Tosio 1972) he supported this attitude. Cranstoun (1975) did not agree with this opinion finding that, since *Syndiamesa hygropetrica* (Kieff.) was determined by Edwards as a species typical of the genus *Syndiamesa* (a type determined by a later designation) then it is a carrier of the genetic name *Syndiamesa*, and *Parapotthastia* is a younger synonym in the formulation of the Code of Zoological Nomenclature. So far, three species *Syndiamesa hygropetrica* (Kieff.), *Syndiamesa edwardsi* (Pag.), and *Syndiamesa franzi*

Goetgh. (Fittkau, Reiss 1978) from Europe were included to the genus *Syndiamesa* in the new formulation.

In the description of species and in diagnoses of genera and groups of species the terminology proposed by Sæther (1980) was used.

2. Systematics

Genus: *Syndiamesa* Kieffer 1918 sensu Edwards 1929

(syn. *Parapotthastia* Serra-Tosio 1968)

Diagnosis, adult ♂: Head: fig. 1, eyes "bare" (microtrichia between ommatidial lenses are short about half height ommatidial lens); a few distinct definite setal groups are present on the vertex — frontal setae (= soies préoculaires), vertical setae and postorbitals setae; clypeus with numerous, strong, dark clypeal setae; maxillar palpus five-segmented, longer than the head width. Antenna: plumose, with 13 flagellomeres (Fm), AR usually more than 2, occasionally less than 2, XIII flagellomere with 1 apical seta, pedicel globular usually with 2 setae ventro-medially. Thorax: fig. 2, 3, acrostichal setae present or lacking; dorsocentrals in a single row in the medial part and in a double row in the frontal and back part arising from distinct pale spots; prealar callus always with a distinct group of prealar setae settled on one pale field and sometimes with 4—5 single long setae before this group arising from distinct pale spots; scutellars cover $\frac{2}{3}$ of the frontal part of the scutellum. Legs: fig. 4, fourth tarsal segment (tarsomere) cylindrical (never bilobed at the tip), usually as long as or longer than the fifth; pseudospurs present at apex of tarsomeres 1—3. Wing: wing membrane coarsely dotted with microtrichia ($\times 400$) and only very faintly punctated ($\times 100$), wing margins fringed with macrotrichia, veins R, R₁, and distal part R₄₊₅ with macrotrichia. Hypopygium: anal point broad and pubescent or lacking; inferior volsella of the medial part of the gonocoxite always lacking, sometimes small volsella at the base of gonocoxites.

Type species: *Syndiamesa hygropetrica* (Kieffer, 1909).

This genus can be divided into 2 groups based on morphology of male: *S. hygropetrica* group and *S. edwardsi* group.

Syndiamesa hygropetrica group

Diagnosis, adult ♂: AR varies from 1 to 3; scutum without acrostichal, single setae at prealar callus lacking, fig. 2; anal point short and broadest

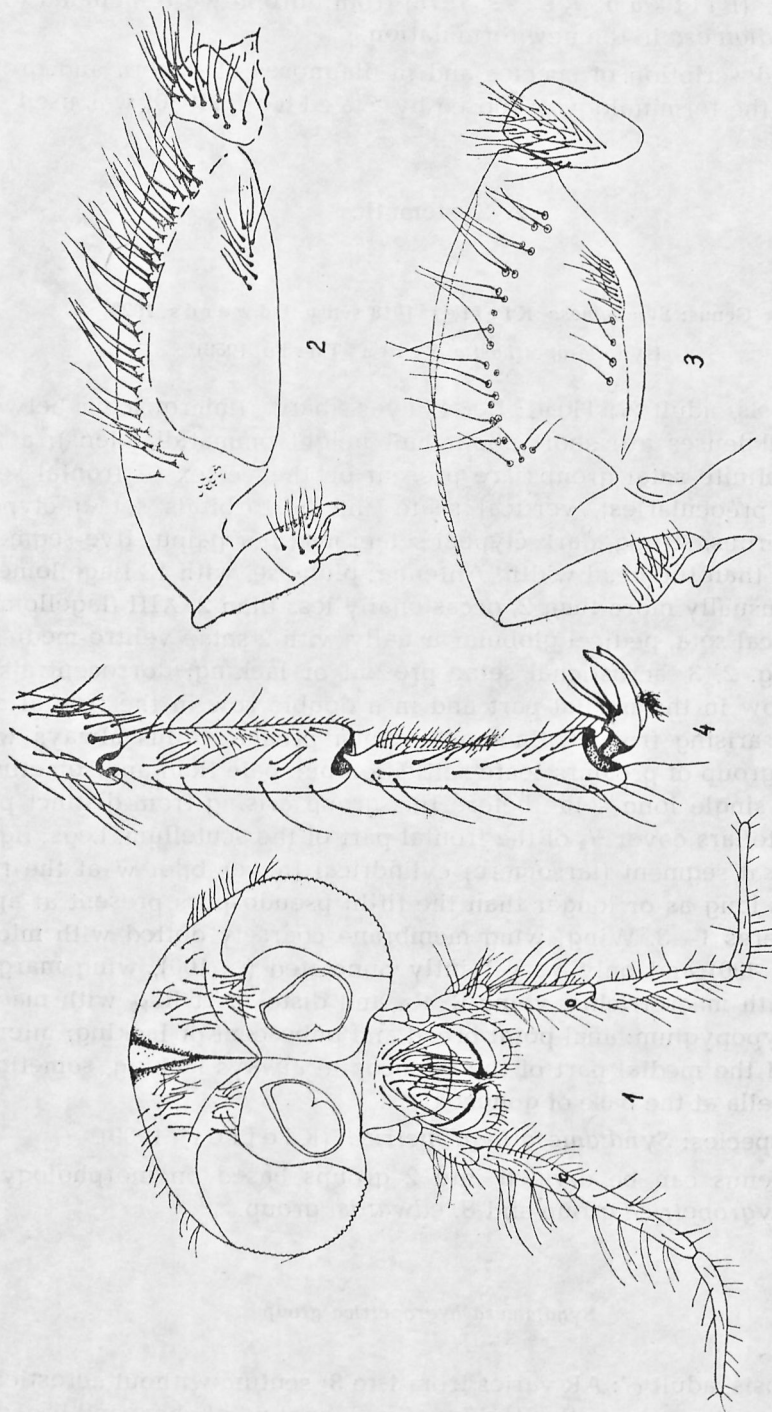


Fig. 1. Anterior view of head of *Syndiamesa serratosioi* sp. n. Fig. 2. Lateral view of thorax of *Syndiamesa hygropetrica* (Kieffer).
 Fig. 3. Lateral view of thorax of *Syndiamesa serratosioi* sp. n. Fig. 4. Distal tarsal segments of *Syndiamesa serratosioi* sp. n.

basally, covered with fine microtrichia at least in the basal part, gonostylus with several subterminal spurs distally.

At present to this group belong: *S. hygropetrica* (Kieffer) and *S. kashime* Tokunaga.

***Syndiamesa hygropetrica* (Kieffer 1909)**

- Imago ♂: Kieffer 1909 (= *Diamesa hygropetrica* sp. n.)
 Kieffer 1918 (= *Syndiamesa hygropetrica* (Kieffer))
 Edwards 1929 (= *Syndiamesa hygropetrica* (Kieffer))
 Goetghebuer 1932 (= *Syndiamesa hygropetrica* (Kieffer))
 Goetghebuer 1939 (= *Syndiamesa hygropetrica* (Kieffer))
 Pagast 1947 (= *Diamesa hygropetrica* (Kieffer))
 Serra-Tosio 1971 (*Parapotthastia hygropetrica* (Kieffer))
- Imago ♀: Kieffer 1918, Goetghebuer 1932, 1939, Serra-Tosio 1971
- Pupa: Potthast 1921 (= *Diamesa hygropetrica* (Kieffer))
 Pagast 1947 (= *Diamesa hygropetrica* (Kieffer))
 Serra-Tosio 1971 (= *Parapotthastia hygropetrica* (Kieffer))

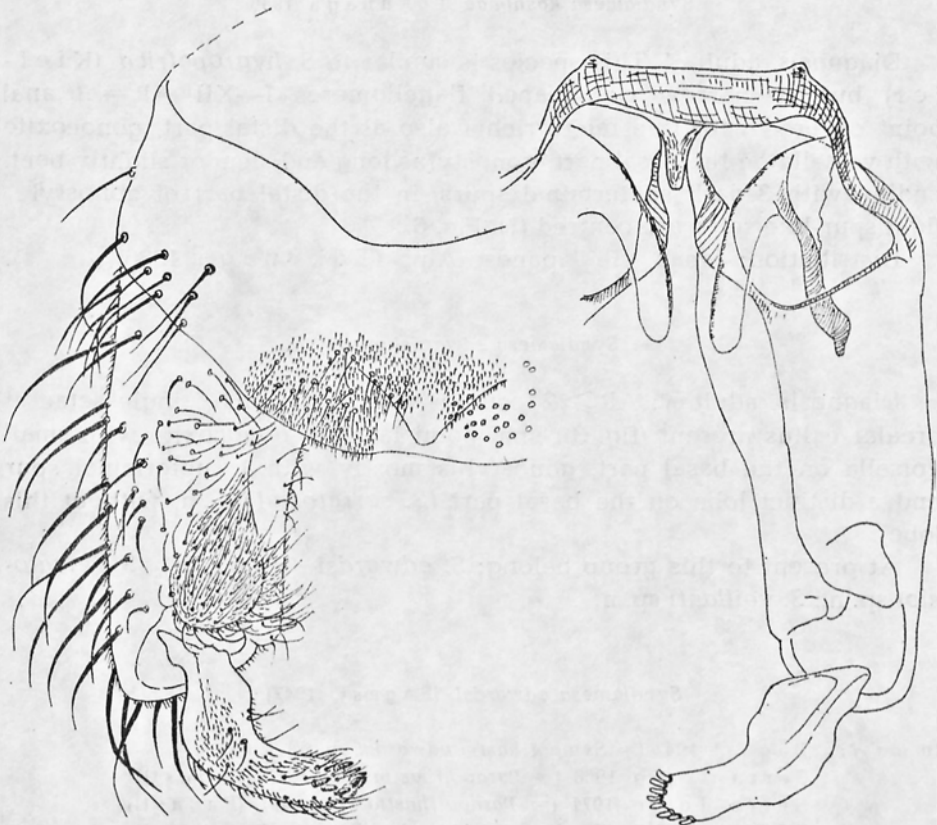


Fig. 5. Hypopygium of *Syndiamesa hygropetrica* (Kieffer) (after Serra-Tosio 1971)

Larva: Potthast 1921 (= *Diamesa hygropetrica* (Kieffer))
 (later key description of larvae — Johannsen 1936, Tshernovskij 1949, Thienemann 1952, Romaniszyn 1958, Lellak 1971, Pankratova 1970 are too laconic and on this basis precise identification of the species is difficult).

Diagnosis, adult ♂. AR = 1, 3, the ratio of the length of palpus and maximum width of the head = 1.10; acrostichal setae and single setae at prealar callus lacking; tarsomeres covered with short setae (BR bristle ratio = 2.1) ratios $BV_{PI} = 3.17$, $LR_{PI} = 0.72$; anal point covered with fine microtrichia only at the basal part, gonocoxite without small volsella at the base, gonostylus relatively short, sickle-shaped bent ending with 8—10 subterminal spurs, fig. 5.

Distributions: Europe, West-wall (Sauerland) and the Pirenees Mts (Serra-Tosio 1972). Other localities from the Alps, the Vosges Mts, Schwarzwald, the territory of the USSR and the Maroccan Atlas Mts are questioned by this author.

Syndiamesa kashimae Tokunaga 1936

Diagnosis, adult ♂: This species is similar to *S. hygropetrica* (Kieffer) but has narrow ring-shaped flagellomeres I—XII, AR = 3; anal point covered with fine microtrichia also at the distal part, gonocoxite with volsella on the basal part, gonostylus long and slender slightly bent, ending with 3 dark subterminal spurs, in the distal part of gonostylus light spur-like setae are centred (?). Fig. 6.

Distribution: Japan, the Japanese Alps (Tokunaga 1936).

Syndiamesa edwardsi group

Diagnosis, adult ♂: AR ≥ 2 , scutum with acrostichal, single setae at prealar callus present (fig. 3); anal point lacking, gonocoxite with small volsella on the basal part, gonostylus mostly with 1 subterminal spur and a distinct lobe on the basal part (*S. serratosioi* sp. n. without this lobe).

At present to this group belong: *S. edwardsi* (Pagast), *S. serratosioi* sp. n., *S. vaillanti* sp. n.

Syndiamesa edwardsi (Pagast, 1947)

Imago ♂: Pagast 1947 (= *Sympothastia edwardsi* sp. n.)
 Serra-Tosio 1968 (= *Parapothastia edwardsi* (Pagast))
 Serra-Tosio 1971 (= *Parapothastia edwardsi* (Pagast))
 Pinder 1978 (= *Syndiamesa edwardsi* (Pagast))
 Imago ♀: Serra-Tosio 1971 (= *Parapothastia edwardsi* (Pagast))

Pupa: Serra-Tosio 1971 (= *Parapotthastia edwardsi* (Pagast))
 Larva: unknown

Imago ♂: body length 7 mm, wing length 5 mm, general colour of the body dark-brown (described on the basis of one male specimen from the French Alps; leg. B. Serra-Tosio)

Head: dark brown, eyes "bare", vertex with a distinct group of 10–13 frontal setae, clypeus with 32 strong clypeal setae.

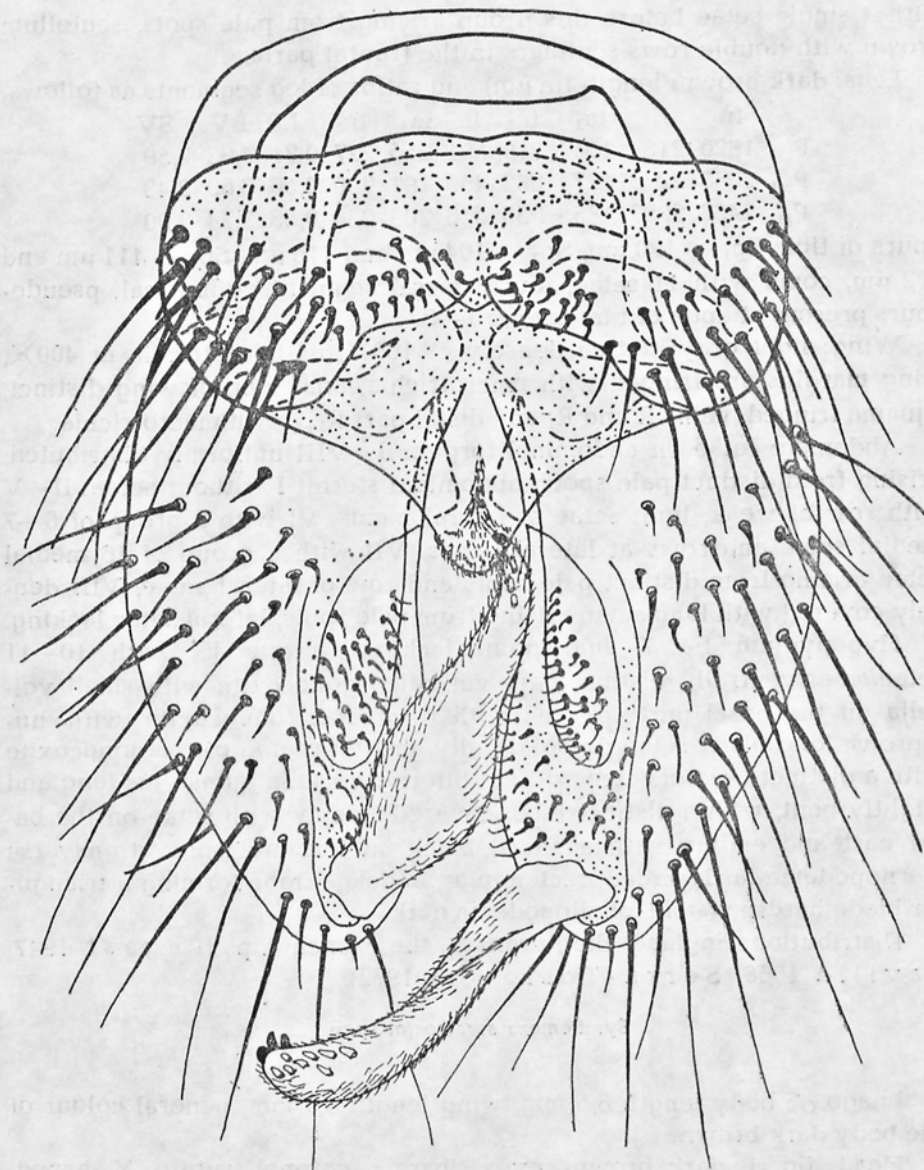


Fig. 6. Hypopygium of *Syndiamesa kashimae* Tokunaga (after Tokunaga 1936)

Antenna: plumose, 13 flagellomeres (Fm), $L_{Fm\ 1-13}$: $W_{Fm\ 1-13}$ (in μm) 93 : 60, 28 : 39, 23 : 37, 23 : 37, 23 : 37, 23 : 37, 23 : 37, 28 : 37, 28 : 37, 35 : 28, 42 : 28, 42 : 28, 1055 : 28, AR = 2,35, Fm_{13} bears Scf setae on $\frac{1}{6}$ of the terminal part of the segment with a distinct apical seta, antennal furrow extending from Fm_4 to apex Fm_{13} .

Thorax: dark brown, dorsocentral setae numerous (30—40 each side), prealar callus with a group of 13—14 prealar setae on one pale field and with 4 single setae before this group arising from pale spots, scutellum brown with double rows scutelars in the frontal parts.

Legs: dark brown; length (in μm) and ratios of leg segments as follows:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV
P _I	1820	2184	1547	819	591	255	227	0,71	2,93	2,59
P _{II}	2093	2275	1274	682	455	191	200	0,56	3,69	3,43
P _{III}	2457	2957	1865	955	546	209	236	0,63	3,74	2,90

Spurs of tibia Sp₁ — 120 μm , Sp₂ — 104 μm and 116 μm , Sp₃ — 111 μm and 132 μm , comb with 11 setae, fourth tarsal segment cylindrical, pseudo-spurs present at apex of tarsomeres 1—3.

Wing: light gray: dotted densely at 100 \times , as microtrichia at 400 \times , wing margins are fringed with macrotrichia, anal lobe of wing distinct, squama fringed, veins R and R₁ and distal part R₄₊₅ with macrotrichia.

Abdomen: setae on abdominal tergites I—VIII uniformly distributed, arising from distinct pale spots; abdominal sternit I without setae, II—V with row of weak, light setae at lateral bands, VI with a group of 6—7 medial setae and rows at lateral bands, VII with a group of 16 medial setae arising from distinct pale spots and row of lateral setae, VIII densely covered with long setae arising from pale spots, lateral setae lacking.

Hypopygium: fig. 7, anal point lacking; tergite IX with 10—11 setae/side; ventrally distinct pars ventralis; gonocoxite with small volsella on the basal part covered with thin setae; gonocoxite with numerous, long black setae dorsolaterally, medial region of the gonocoxite with a distinct field of setae without inferior volsella; gonostylus long and slightly bent, with a distinct lobe, covered thickly with setae on the basal part and ending with a short, black subterminal spur; transverse sternopodeme fairly broad, rectangular, aedeagal lobe forming a triangular blade hardly visible, phallopodeme dark.

Distribution: England, the Pyrenees, the French Alps (Pagast 1947, Laville 1966, Serra-Tosio 1968, 1972).

Syndiamesa serratosoi sp. n.

Imago σ : body length 6,5 mm, wing length 4,4 mm, general colour of the body dark brown.

Head: fig. 1, dark brown; eyes "bare"; coronal suture Y-shaped, reaching to antennal sockets, 4 short weak coronal setae on a coronal

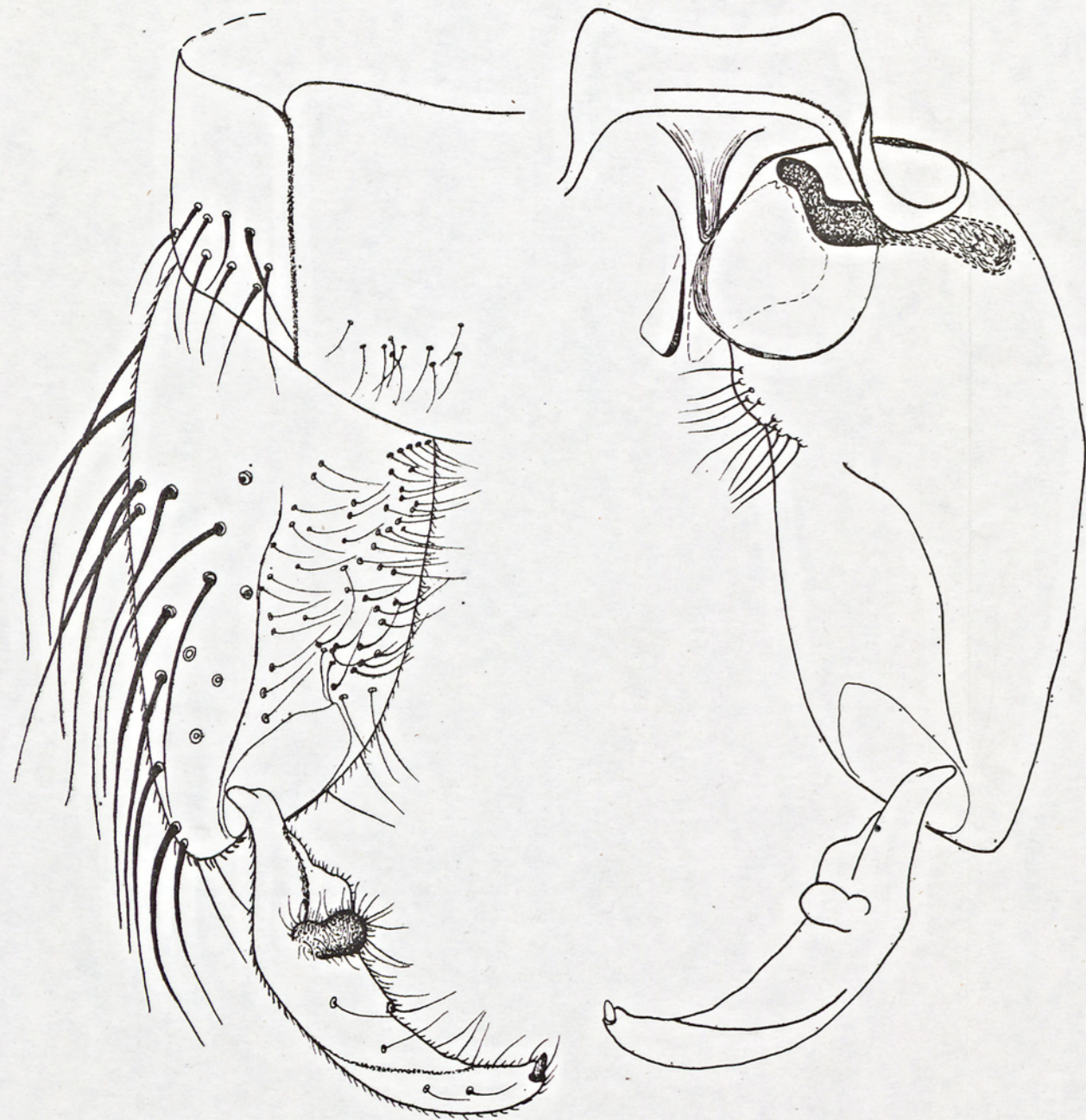


Fig. 7. Hypopygium of *Syndiamesa edwardsi* (Pagast)

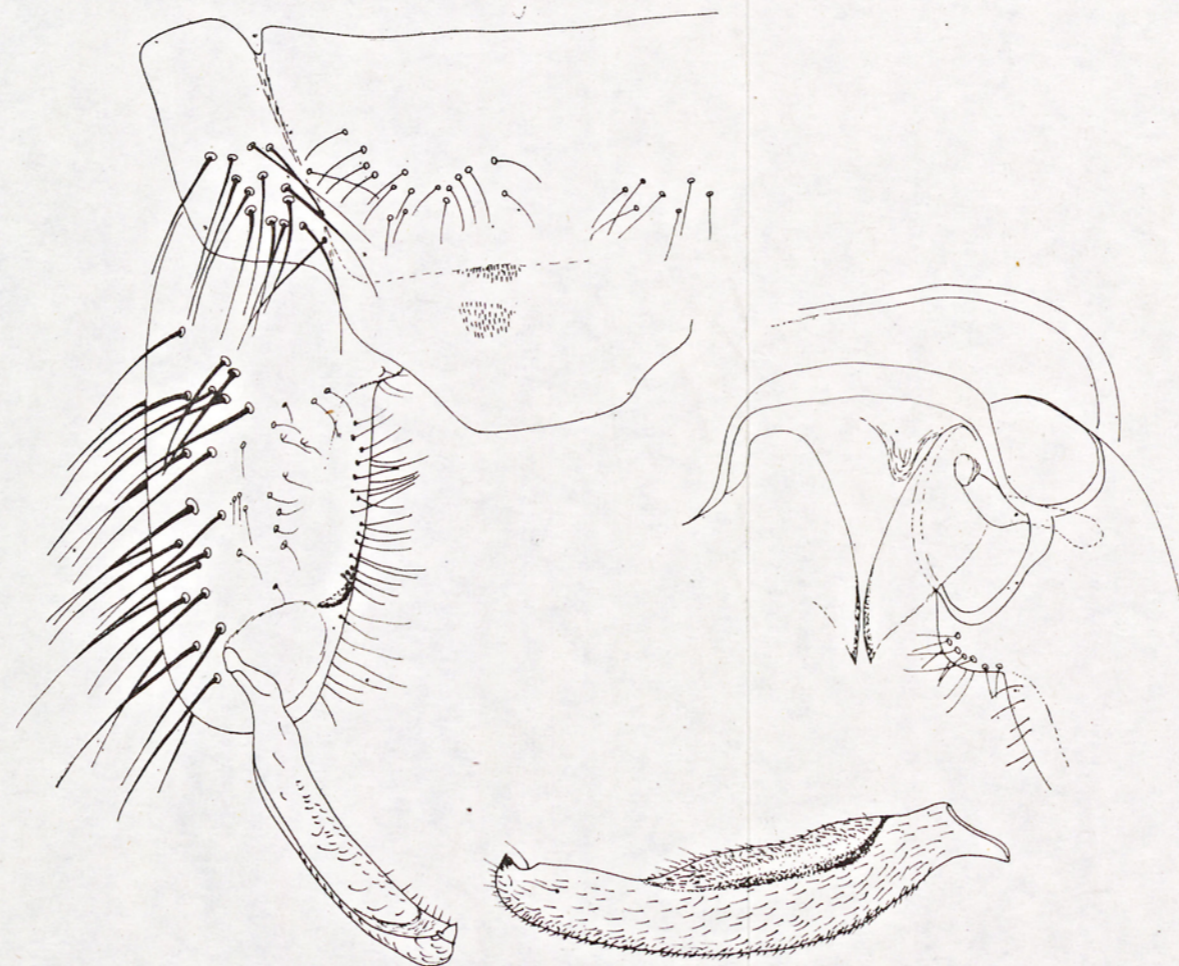


Fig. 8. Hypopygium of *Syndiamesa serratosioi* sp. n.



Fig. 9. Hypopygium of *Syndiamesa vaillanti* sp. n.

triangle; distinct group of 8—12 frontal setae separated from the vertical setae, one continuous row of postorbitalis setae, vertex well delimited from antennal sockets covered with microtrichia; clypeus with 24 strong, black clypeal setae; palpus (Pm) of maxilla five-segmented, $L_{Pm\ 1-5}$: $W_{Pm\ 1-5}$ (in μm) 60 : 60, 136 : 48, 200 : 40, 328 : 40, 320 : 32, Pm_1 without setae, Pm_{2-4} with long, black setae, Pm_5 only with few weak setae, Pm_3 with sensilla capitata, all palpal segments with grouped microtrichia (5—8 microtrichia in group); length of palpus and maximum width of head ratio = 1,15.

Antenna: plumose, 13 flagellomeres (Fm), $L_{Fm\ 1-13}$: $W_{Fm\ 1-13}$ (in μm) 80 : 72, 24 : 58, 24 : 56, 24 : 56, 32 : 40, 32 : 40, 32 : 40, 32 : 40, 40 : 40, 32 : 40, 32 : 40, 32 : 40, 952 : 40, AR = 2,29, Fm_1 swollen distally with basal nipple and 1 seta, Fm_{2-12} cylindrical with two annuli of long flagellar setae, Fm_{13} with flagellar setae occupying 5/6 of the length of the segment, the distal part only with SCf setae and ending 1 apical seta, antennal furrow extending from Fm_4 to apex Fm_{13} ; pedicel globose, 2 pedicellar setae ventro-medially; scapus pear-shaped pointed dorsally; pedicel and flagellomeres covered with fine microtrichia.

Thorax: fig. 3, dark brown; anteprenotum with medial comisure fusing two sclerites forming anteprenotum, sclerites seen laterally narrow in their dorsal part, 12—13 anteprenotal setae near the lateral edge; acrostichals present, 25 dorsocentral setae on each side; prealar callus, apart from a group of 10—11 setae on one pale field, with 4 single setae before this group arising from pale spots; scutellum brown with some rows scutellars into the frontal part.

Legs: dark brown, long, lengths (in μm) and ratios of leg segments as follows:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV
P _I	1530	1870	1411	731	459	204	204	0,75	3,01	2,41
P _{II}	1768	1819	1139	612	347	170	204	0,65	3,54	3,14
P _{III}	2125	2431	1615	850	627	204	221	0,66	3,24	2,28

spurs of tibia, Sp_1 — 112 μm , Sp_2 — 104 μm , and 95 μm , Sp_3 — 120 μm and 96 μm , comb with 14 setae (40—80 μm), the fourth tarsal segment cylindrical, pseudospurs present at apex of tarsomeres 1—3 they do not differ distinctly, however, from other setae on tarsomeres; claws (each 80 μm) with about 6 apical teeth, empodium short about half height claws; all segments of legs covered with long black-brown setae and groups of fine microtrichia (3—4 microtrichia in a group).

Wing: similar to wing of the *S. edwardsi* (P a g a s t).

Abdomen: setae on abdominal tergites I—VIII uniformly distributed, arising from distinct pale spots, abdominal sternit I without setae, II—V with rows of small setae at lateral bands, VI with a 1 medial seta arising from distinct pale spots and rows at lateral bands, VII with group of 12 medial setae arising from a distinct pale spot and a row of lateral setae,

VIII densely covered with long setae arising from pale spots, lateral setae lacking. All thoracic sclerites covered with fine microtrichia.

Hypopygium: fig. 8, anal point lacking; tergite IX with about 16 small brown setae/side; ventrally distinct pars ventralis; gonocoxite very long, slender with small volsella on the basal part covered with dark setae and with numerous long dark brown setae dorsolaterally, medial region of the gonocoxite with a distinct field of setae without inferior volsella; gonostylus long and slender nearly straight, ending with 1 short, black sub-terminal spur, without a lobe on the basal part; transverse sternopodeme arched, relatively thin.

Imago ♀, pupa, larva: unknown.

Material: Holotype ♂ imago; Poland, the Tatra Mts, steam Olczyski, 1100 m a.s.l., March 4, 1979; paratype: 1 ♂, date as above, February 3, 1978. Holotype and paratype are kept in the collection of the Laboratory of Water Biology of the Polish Academy of Sciences in Cracow.

Systematic remarks: *S. serratosioi* sp. n. is quite similar to the *S. edwardsi* (P a g a s t) except: gonostylus nearly straight, without a lobe on the basal part, transverse sternopodeme arched, relatively thin, abdominal sternit VI with 1 medial seta.

Syndiamesa vaillanti sp. nov.

Imago ♂: body length (not recorded before slide mounting), wing length 4 mm, general colour of the body dark brown.

Head: similar as in *S. edwardsi* (P a g a s t) except: 7 frontal setae, 28 clypeal setae, $L_{Pm\ 1-5} : W_{Pm\ 1-5}$ (in μm) 52 : 44, 120 : 56, 208 : 48, 260 : 48, 320 : 24.

Antenna: plumose, 13 flagellomeres, $L_{Fm\ 1-13} : W_{Fm\ 1-13}$ (in μm) 80 : 60, 20 : 48, 24 : 44, 24 : 40, 24 : 36, 24 : 36, 28 : 32, 28 : 28, 32 : 28, 26 : 28, 40 : 28, 40 : 28, 864 : 28, AR = 2,16, Fm_1 bell-shaped with 2 setae, Fm_{2-12} with two annuli of long flagellar setae, Fm_{13} with flagellar setae occupying 4/5 of the length of the segment, the distal part swollen mace-like and covered with Scf setae ending with 1 apical seta, antennal furrow extending from Fm_4 to apex Fm_{13} , pedicel globose; pedicel and flagellomeres covered with fine microtrichia.

Thorax: similar as in *S. edwardsi* (P a g a s t) except: 18 lateral antepnotal setae, 11 acrostichals, 28 dorsocentrals, and prealar callus with a group of 11—12 setae in one pale field and 4—5 separate setae before this group arising from pale spots, scutellum brown with two rows of long scutellars in the frontal part.

Legs: dark brown, very long, lengths and ratios of leg segments (in μm) as follows:

	fe	ti	ta ₁	ta ₂	ta ₃	ta ₄	ta ₅	LR	BV	SV
P _I	1938	2312	1649	765	510	238	204	0,71	3,43	2,57
P _{II}	2210	2227	1309	782	357	170	204	0,58	3,79	3,38
P _{III}	2550	3009	2040	901	510	221	221	0,68	4,10	2,72

Sp₁ — 92 μm, Sp₂ — 80 μm and 80 μm, Sp₃ — 112 μm and 80 μm, comb with 13 setae, fourth tarsal segment cylindrical, pseudospurs present at the apex of tarsomeres 1—3, claws (each 80 μm) with 6 apical teeth, empodium short about half height of claws.

Wing: quite similar as in *S. edwardsi* (P a g a s t).

Abdomen: chaetotaxy of the tergites and the sternites are similar to *S. edwardsi* (P a g a s t) (VI sternites is destroyed).

Hypopygium: fig. 9, anal point lacking, tergite IX with about 28 small brown setae/side, ventrally distinct pars ventralis, gonocoxite long slender, with a small bare volsella on the basal part, gonostylus very long and slender, sickle-shaped bent, with a distinct lobe, the basal part covered with setae, ending with 2 or 3 short, black subterminal spurs; transverse sternopodeme very broad medially with distinct antero-lateral projections.

Imago ♀, pupa, larva: unknown.

Material: holotype: ♂ imago, Marocco, 2500 m a.s.l., June 19, 1955, slide N° 11, coll. F. Vaillant; paratypes: 2 ♂, Marocco, 2500 m a.s.l., June 19, 1954, slides N° 1 and N° 11; 1 ♂, Marocco, 2500 m a.s.l., July 15, 1954, slide N° 43, coll. F. Vaillant. A holotype and paratypes are kept in the collection of the Zoologische Sammlung des Bayerischen Staates, Munich.

Systematic remarks: *S. vaillanti* sp. n. is quite similar to the *S. edwardsi* (P a g a s t) except: tergite IX with 28 setae/side, gonocoxite with a naked small volsella on the basal part, gonostylus ending with 2—3 subterminal spurs, transverse sternopode very broad medially, with distinct antero-lateral projections.

3. Species of doubtful systematic status

Syndiamesa franzi Goetghebuer 1949 — The original description is very laconic (Goetghebuer 1949) and lacks features permitting to include this species into the genus *Syndiamesa* according to the present criteria. The illustration of the hypopyge is also too schematic and not very readable. Particularly obscure is the structure in the medial part of the 9th segment (fig. 10). Serra-Tosio (1971, 1972) includes this species to the group of doubtful species. Fittkau, Riess (1978) include it to the genus *Syndiamesa*. Found in Austria, Dischbacher Alpen, Dorne Kogel.

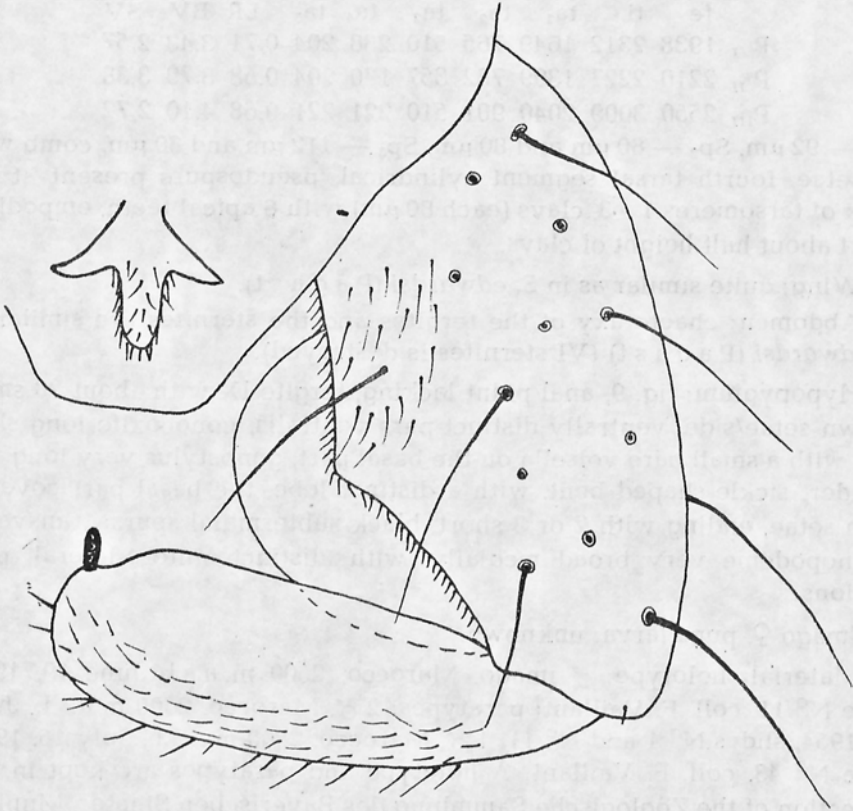


Fig. 10. Hypopygium of *Syndiamesa franzi* Goetghebuer (after Goethebuer 1949)

Syndiamesa takatensis Tokunaga 1936 — The original description (Tokunaga 1936) made on the basis of one male specimen does not bear any features permitting to include this species to the genus *Syndiamesa* according to the present criteria. Lack of illustrations makes identification difficult. Japan, Takata.

Syndiamesa montana Tokunaga 1936 — On the basis of a very exact description and illustration (Tokunaga 1936) it may be stated with absolute certainty that this species does not belong to the genus *Syndiamesa* according to the present criteria. On the other hand, it would be difficult to include it into any of the known genera. Japan, the Japanese Alps.

Syndiamesa polaris Kieffer 1926 — The original description does not allow to include this species into the genus *Syndiamesa* with full

responsibility; yet the accuracy of such identification cannot be, however, excluded. Found in North America, Cap Rutherford.

Syndiamesa gelida Kieffer 1922 — The description given by Gotghebuer (1932, 1939) is very superficial and it is difficult to include this species into the genus *Syndiamesa* according to the present criteria. Pagast (1947) includes it to the group of species not elucidated. If no opportunity arises of checking typical specimens this species should be considered a nomen dubium. New Land.

Syndiamesa lobifera Kieffer 1918 — Neither their original description (Kieffer 1918) nor later descriptions and illustration (Goetghebuer 1939) permit to include this species to the genus *Syndiamesa* according to the present criteria with full certainty, though, on the other hand, the correctness of such identification may be unquestionable as well. Pagast (1947) includes it into the group of doubtful species. Found in Little Asia.

4. List of species which are at present not included into the genus *Syndiamesa*

a. Species included into other genera:

Syndiamesa pertinax (Garrett) (Johanssen 1937, Roback 1957) at present *Pseudodiamesa pertinax* (Garrett) (Oliver 1959).

Syndiamesa branickii (Nowicki) (Mueller 1923, Goetghebuer 1932) at present *Pseudodiamesa branickii* (Nowicki) (Pagast 1947).

Syndiamesa nivosa (Goetghebuer) (Goetghebuer 1928, 1932, 1939) at present *Pseudodiamesa nivosa* (Goetghebuer) (Pagast 1947).

Syndiamesa stackelbergi Goetghebuer (Goetghebuer 1933, 1939) at present *Pseudodiamesa stackelbergi* (Goetghebuer) (Serra-Tosio 1973).

Syndiamesa partica Roback (Roback 1957) at present *Pagastia partica* (Roback) (Olivier 1959).

Syndiamesa artisia Roback (Roback 1957) at present *Pagastia artisia* Roback (Olivier 1959).

Syndiamesa lanceolata Tokunaga (Tokunaga 1936) most probably *Pagastia lanceolata* (Tokunaga) (Olivier 1959).

Syndiamesa macronyx Kieffer (Kieffer 1918, Mueller 1923, Goetghebuer 1932, 1939) at present *Onychodiamesa macronyx* (Kieffer) (Pagast 1947).

Syndiamesa dampfi Kieffer (Goetghebuer 1932, 1939) at present *Diamesa dampfi* (Kieffer) (Pagast 1947).

Syndiamesa alpina Goetghebuer (Goetghebuer 1941) at present *Diamesa alpina* (Goetghebuer) (Fittkau, Reiss 1978).

Syndiamesa orientalis Tshernovskij 1949 (Tshernovskij 1949, Pankratowa 1970) at present *Pagastia orientalis* (Tshernovskij) (Makarčenko 1981).

b. Synonyms of other species:

Syndiamesa biappendiculata Goetghebuer (Goetghebuer 1932, 1939) is a synonym of *Diamesa geminata* Kieffer (Hansen, Cook 1976).

Syndiamesa pilosa Kieffer (Kieffer 1924) is a synonym of *Pseudodiamesa branickii* (Nowicki) (Pagast 1947).

c. Probable synonyms of other species:

Syndiamesa albipennis (Kieffer) (Kieffer 1918, Goetghebuer 1939) is probably a synonym of *Pseudodiamesa nivosa* (Serra-Tosio 1972). This species was described on the basis of female specimens (Kieffer 1918) and Pagast (1947) with regard to very laconic description it is included into the group of doubtful species.

Syndiamesa pubitarsis (Zetterstedt) (Goetghebuer 1932, 1939) is probably a synonym of *Pseudodiamesa nivosa* (Goetghebuer) (Serra-Tosio 1972). On the other hand, Pagast (1947) finds that the problem of the original description by Zetterstedt has not been fully elucidated, whereas later descriptions refer partly to *Pseudodiamesa nivosa* (Goetghebuer) and *P. branickii* (Nowicki).

Syndiamesa vidua Kieffer (Kieffer 1922, Goetghebuer 1932, 1939) has many features common with *Lappodiamesa brundini* Serra-Tosio (Serra-Tosio 1971), but these two species have not been fully synonymized.

Syndiamesa chiron Haliday (Goetghebuer 1939). Specimens described by Goetghebuer 1939 refer to *Pseudodiamesa rufovittata* Goetghebuer, whereas, the status of the specimens described by Haliday is not elucidated (Pagast 1947).

d. Species of the genus *Syndiamesa* considered nomina dubia (Serra-Tosio, 1971)

Syndiamesa borealis (Kieffer) (Kieffer 1918)

Syndiamesa nivicola (Bezzi) (Bezzi 1918, Goetghebuer 1932, 1939)

Syndiamesa leucopeza Mueller (Mueller 1923)

e. Species described on the basis of larvae only

- Syndiamesa jacutica* Zvereva, 1950 (Pankratova 1970)
Syndiamesa komensis Zvereva, 1950 (Pankratova 1970)
Syndiamesa monostriata Pankratova, 1950 (Pankratova 1970).

5. Key to adult male of the genus *Syndiamesa* Kieffer

1. Acrostichal setae absent, no single setae on prealar callus (fig. 2), anal point short, broad, triangular, gonostylus without a distinct lobe in basal part, ending with several subterminal spurs (figs 5, 6) 2
 — Acrostichal setae present, on prealar callus single setae arising from distinct pale spots (fig. 3), anal point absent, gonostylus usually with a distinct lobe in the basal part or without lobe, ending with one subterminal spur (sometimes 2—3 subterminal spurs) (figs 7, 8, 9) 3
2. AR = 1.2, anal point pubescent only on the basal part, gonocoxite without volsella on the basal part, gonostylus ending with 8—10 dark subterminal spurs (fig. 5) *S. hygroperitica* Kieffer
 — AR = 3, anal point pubescent, gonocoxite with small volsella on the basal part, gonostylus ending with 3 thin subterminal spurs (fig. 6) *S. kashimae* Tokunaga
3. Gonostylus without a distinct lobe on the basal part, transverse sternopodeme arched, relatively thin (fig. 8) *S. serratosioi* sp. n.
 — Gonostylus with a distinct lobe on the basal part, transverse sternopodeme rectangular broad medially 4
4. Tergite IX with 10—11 setae/side, gonocoxite with covered small volsella on the basal part with numerous setae, gonostylus ending with 1 subterminal spur, transverse sternopodeme fairly broad, rectangular (fig. 7) *S. edwardsi* (Pagast)
 — Tergite IX with 28 setae/side, gonocoxite with a naked small volsella on the basal part, gonostylus ending with 2—3 subterminal spurs, transverse sternopodeme very broad medially, with distinct antero-lateral projection (fig. 9) *S. vaillantii* sp. n.

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6. Polish summary

**Rodzaj *Syndiamesa* Kieffer 1918 (*Diamesinae*; *Chironomidae*; *Diptera*)
oraz opis dwu gatunków: *Syndiamesa serratosioi* sp. n. i *Syndiamesa vaillanti* sp. n.**

Przedstawiono rewizję rodzaju *Syndiamesa* Kieffer 1918 sensu Edwards 1929 opierając się na stadiach imaginalnych samców. Nazwa rodzajowa *Parapotthastia* Serra-Tosio jest synonimem rodzaju *Syndiamesa*. Wraz z nowo opisanymi gatunkami *Syndiamesa serratosioi* (ryc. 1, 3, 4, 8) i *S. vaillanti* (ryc. 9) rodzaj *Syndiamesa* liczy obecnie pięć gatunków (*S. edwardsi* (Pagast) (ryc. 7), *S. hygropetrica* (Kieffer) (ryc. 2, 5), *S. kashimae* (Tokunaga) (ryc. 6). Natomiast zaliczenie do tego rodzaju *S. iranzi* Goetghebuer (ryc. 10) (Fittkau, Reiss 1968), *S. takatensis* Tokunaga, *S. montana* Tokunaga (Tokunaga 1936), *S. polaris* Kieffer (Kieffer 1926), *S. gelida* Kieffer, *S. lobifera* Kieffer (Goetghebuer 1939) nie jest pewne i wymaga ponownego przebadania okazów typowych lub materiałów ze stanowisk typowych. Dano również wykazy gatunków zaliczanych poprzednio do rodzaju *Syndiamesa*, które obecnie należą do innych rodzajów, są lub są prawdopodobnymi synonimami innych gatunków, oraz tych, które uznano za nomina dubia (Serra-Tosio 1972) lub opisanych wyłącznie na podstawie larw (Pankratova 1970). W załączeniu dano klucz do oznaczania stadiów imaginalnych samców rodzaju *Syndiamesa*.

7. References

- Bezzi M., 1918. Studi sulla dipterofauna nivale delle Alpi italiane. Soc. Ent. Ital. Firenze, Mem., 9, 1—164.
- Brundin L., 1956. Zur Systematik der *Orthoclaadiinae* (Dipt., *Chironomidae*). Rep. Inst. Freshwat. Res. Drottningholm, 37, 5—185.
- Cranston P. S., 1975. Corrections and additions to the list of British *Chironomidae* (Diptera). Entomol. Month. Mag., 110, 87—95.
- Edwards F. W., 1929. British non-biting midges (*Diptera*, *Chironomidae*). Trans. Ent. Soc. London, 77, 279—430.
- Fittkau E. J., F. Reiss, 1978. *Chironomidae*. In: J. Illies (ed.) — Limnofauna Europea. Eine Zusammenstellung aller die europäischen Binnengewässer bewohnenden mehrzelligen Tierarten mit Angaben über ihre Verbreitung und Ökologie. Zweite, überarbeitete und ergänzte Auflage. Stuttgart, New York, G. Fischer, Amsterdam, Swets, Zeitlinger B.V., 404—440.
- Fittkau E. J., D. Schlee, F. Reiss, 1967. *Chironomidae*. In: J. Illies (ed.) — Limnofauna Europea. Stuttgart, G. Fischer, 346—381.
- Goetghebuer M., 1928. Description d'un *Chironomidae* du groupe *Diamesa* (*Syndiamesa nivosa* n. sp.). Encycl. Entomol., Sér. B, 2, *Diptera*, 4, 123—128.

- Goetghebuer M., 1932. Diptères (Nematocères). *Chironomidae*, 4, *Orthoclaadiinae*, *Cyrononeurinae*, *Clunioninae*, *Diamessinae*. Faune de France, 23, 1—204.
- Goetghebuer M., 1933. *Ceratopogonidae* et *Chironomidae* nouveaux ou peu connus d'Europe (troisième note). Bull. Ann. Soc. Ent. Belg., 73, 209—221.
- Goetghebuer M., 1939. *Tendipedidae* (*Chironomidae*). c. Subfamille *Diamessinae*. A. Die Imagines. In: E. Lindner (ed.) — Die Fliegen der paläarktischen Region., 13 d, 1—28.
- Goetghebuer M., 1941. Quelques Chironomides du Tyrol. Bull. Mus. R. Hist. Nat. Belg., 17, 1—8.
- Goetghebuer M., 1949 *Ceratopogonidae* et *Chironomidae* nouveaux ou peu connus d'Europe (treizième note). Bull. Inst. R. Sci. Nat. Belg., 25, 1—8.
- Hansen D. C., E. F. Cook, 1976. The systematics and morphology of the nearctic species of *Diamesa* Meigen, 1835 (*Diptera: Chironomidae*). Mem. Amer. Ent. Soc., 30, 1—203.
- Johannsen O. A., 1937. Aquatic *Diptera*. Part. 3. *Chironomidae*: subfamilies *Tanypodinae*, *Diamessinae* and *Orthoclaadiinae*. Cornell Univ. Agr. Exp. Stat., Mem., 205, 1—84, 18 pls.
- Kieffer J. J., 1909. Diagnoses de nouveaux Chironomides d'Allemagne. Bull. Soc. Hist. Nat. Metz, 26, 37—56.
- Kieffer J. J., 1918. Beschreibung neuer, auf lazarettsschiffen des östlichen Kriegsschauplatzes und bei Ignalino in Litauen von Dr. W. Horn gesammelter Chironomiden, mit Übersichtstabellen einiger Gruppen von paläarktischen Arten (*Dipt.*). Ent. Mitt., 7, 94—110.
- Kieffer J. J., 1924. Chironomides nouveaux ou rares de l'Europe centrale. Bull. Soc. Hist. Nat. Moselle, 30, 11.
- Kieffer J. J., 1930. (1926). Chironomiden der 2. Fram-Expedition (1898, 1902). Norsk Ent. Tidsskr., 2, 78—89.
- Laville H., 1966. Chironomides du massif de Néouvielle (Pyrénées Centrales) (*Diptères*). Ann. Limnol., 2, 203—216.
- Lellák J., 1970. Kľúč k určeni larev pakomáru čeledi *Chironomidae* (se zřetelem k fauně Československa). Acta Univ. Carol., Biol., 1, 1—110.
- Makarčenko E. A., 1981. Taksonomija i rasprostranenie nekotorych vidov chironomid podsemejstva *Diamessinae* (*Diptera, Chironomidae*) Dal'nego Vostoka SSSR. In: Bespozvonočnye životnye v ekosistemach lososevych rek Dal'nego Vostoka. Vladivostok, DVNC AN SSSR, 89—113.
- Mueller A., 1923. Dipterologische Mitteilungen, 3. Zur Kenntnis der Subfamilie *Tanypodinae* (*Pelopiinae*). Verh. Zool.-Bot. Ges. Wien, 73, 98—107.
- Oliver D. R., 1959. Some *Diamessini* (*Chironomidae*) from the Nearctic and Palearctic. Ent. Tidsskr., 80, 48—64.
- Pagast F., 1947. Systematik und Verbreitung der um die Gattung *Diamesa* gruppierten Chironomiden. Arch. Hydrobiol., 41, 435—596.
- Pankratova V. Ja., 1970. Ličinki i kukolki komarov podsemejstva *Orthoclaadiinae* fauny SSSR (*Diptera, Chironomidae = Tendipedidae*). Opređelitel' po Faune SSSR, 102, 1—344.
- Pinder L. V. C., 1978. A key to the adult males of the British *Chironomidae* (*Diptera*) the non-biting midges. 1. The key. Sc. Publ., Greshwat. Biol. Ass., 37, 1—169.
- Potthast A., 1915. Über die Metamorphose der *Orthocladus*-Gruppe. Arch. Hydrobiol., Supplbd., 2 (1921), 243—376.
- Roback S. S., 1957. Some *Tendipedidae* from Utah. Proc. Acad. Nat. Sci. Philadelphia, 109, 1—24.
- Romaniszyn W., 1958. Muchówki — *Diptera*. Ochotkowate — *Tendipedidae*. Larwy. Klucze do Oznac. Owadów Polski, 28, 14a, 1—137.

- Saether O., 1980. Glossary of chironomid morphology terminology (*Diptera: Chironomidae*). Ent. Scand., Suppl. 14, 1—51.
- Serra-Tosio B., 1968. Taxonomie phylogénétique des *Diamesini*: les genres *Potthastia* Kieffer, *Sympotthastia* Pagast, *Parapotthastia* n. g. et *Lappodiamesa* n. g. (*Diptera, Chironomidae*). Trav. Lab. Hydrobiol., 59—60, 117—164.
- Serra-Tosio B., 1971. Contribution à l'étude taxonomique, phylogénétique, biogéographique et écologique des *Diamesini* (*Diptera, Chironomidae*) d'Europe. Thèse Univ. Scie. Méd. Grenoble, 1, 1—303, 2, 304—462.
- Serra-Tosio N., 1972. Écologie et biogéographie des *Diamesini* d'Europe (*Diptera, Chironomidae*). Trav. Lab. Hydrobiol., Piscicult. Univ. Grenoble, 63, 5—175.
- Sublette J. E., M. S. Sublette, 1965. Family *Chironomidae* (*Tendipedidae*). In: A. Stone et al. — A catalogue of the *Diptera* of America north of Mexico. Agr. Res. Agr. Handb., 276, 142—181.
- Thienemann A., 1934. Chironomiden-Metamorphosen. 7. Die *Diamesa-Gruppe* (Dipt.). Stett. Ent. Zt., 95, 1—23.
- Thienemann A., 1952. Bestimmungstabellen für die Larven der mit *Diamesa* nächst verwandten Chironomiden. Beitr. Entomol., 2, 244—256.
- Tokunaga M., 1936. *Chironomidae* from Japan (*Diptera*). 4. *Diamesinae*. Philip. J. Sci., 59, 525—552.
- Tshernovskij (Černovskij) A. A., 1949. Opređelitel' ličnok komarov semejstva *Tendipedidae*. Opređelitel' po Faune SSSR, 32, 1—186.